Fehru Mandala Putra

Email : fehruputramen22@gmail.com

LinkedIn, Github

TALKS

PyCon APAC 2024 — Yogyakarta
Regular Speaker — *Oct 2024*

- **Graph Neural Networks (GNNs) in Python**: Delivered a 30-minute talk on the fundamentals and practical applications of GNNs, highlighting their potential to solve real-world problems through Python implementation.
- **Real-World Applications**: Demonstrated the use of GNNs in various fields such as social network analysis, recommendation systems, and bioinformatics through case studies.
- **Hands-on Implementation**: Provided participants with hands-on knowledge of implementing GNNs using Python libraries, including PyTorch Geometric, covering best practices in designing and optimizing GNN models.

Machine Learning Workshop — Surabaya
Workshop Instructor — *Jan 2025*

- **Pokemon Image Classification**: Conducted a 2-hour workshop for high school students on computer vision fundamentals using Pokemon classification as an engaging example to introduce AI concepts.
- **Interactive Learning**: Facilitated hands-on sessions where participants created basic AI models, complemented by live demonstrations and interactive quizzes to reinforce learning.
- **Real-world Applications**: Explored practical applications of computer vision in daily technology including social media filters, facial recognition, autonomous vehicles, and medical imaging.

EXPERIENCE

Aibeecara — Surabaya, Indonesia
Core Technical Developer (BE) — *June 2025 – Present*

- **Team Leadership & Mentorship**: Supervised and mentored a multidisciplinary teams across backend development, DevOps, and AI engineering, providing technical guidance and ensuring project deliverables met quality standards.
- **Backend Development Supervision**: Led backend development using Django framework, overseeing API design, database optimization, and integration of payment systems for the rebuilt Aibeecara application.
- **DevOps Infrastructure Management**: Managed DevOps operations using Docker containerization, Terraform for infrastructure as code, GCP cloud services, GitHub Actions for CI/CD pipelines, and implemented comprehensive monitoring with Grafana and New Relic.
- **AI Engineering Coordination**: Coordinated AI development initiatives utilizing Gemini, GPT, Deepgram, and Whisper technologies to enhance application intelligence and user experience capabilities.
- **Application Reconstruction & Feature Development**: Orchestrated the complete rebuild of Aibeecara application with enhanced features and integrated payment processing, ensuring scalable architecture and improved performance.

Institute Technology of Sepuluh Nopember — Surabaya, Indonesia
Student Lab Coordinator - Machine Learning and Big Data Laboratory — *March 2025 – Present*

- **Team Leadership & Academic Coordination**: Led a team of laboratory assistants in conducting classes as substitute instructors, ensuring continuity of academic activities and maintaining educational quality standards in the absence of lecturers.
- **Laboratory Operations & Compliance**: Oversaw laboratory operations and enforced organizational protocols, ensuring a structured and disciplined environment conducive to research and learning activities.
- **Resource Allocation & IT Asset Management**: Managed and coordinated the utilization of computational resources including workstations and servers, optimizing availability and access for research projects and practicum sessions.
- **Digital Presence & Community Engagement**: Spearheaded social media strategy and content management for laboratory channels, ensuring consistent visibility of lab activities, research achievements, and event announcements to engage the academic community.
- **Academic Event Organization**: Organized and facilitated laboratory events including alumni speaking sessions, fostering knowledge exchange and networking opportunities between students and industry professionals.
- **Conference Committee Participation**: Served as committee member for academic conferences, contributing to event logistics, technical sessions coordination, and ensuring smooth execution of conference activities.

- **GreenTree Capital** — Shanghai, China
  AI Intern — *April 2025 – July 2025*
  - **Email Classification Pipeline**: Sourced and vetted email datasets, executed EDA (bigram analysis, word clouds) to validate suitability for NLP tasks.
  - **Data Engineering & Preprocessing**: Cleaned, transformed, and staged raw email data—ensuring high-quality inputs for model training.
  - **Model Development & Evaluation**: Built, fine-tuned, and benchmarked machine-learning classifiers (sentiment & intent) to achieve optimal accuracy and robustness.
  - **Cross-Functional Collaboration**: Partnered with analysts and engineers to integrate NLP insights into broader analytics workflows and reporting.

- **Bank Negara Indonesia** — Tanjung Perak, Indonesia
  Automation Engineer (Practical Work Intern) — *January 2025 - February 2025*
  - **Innovative WhatsApp Bot Development**: Designed and implemented a WhatsApp bot to enhance customer engagement and streamline promotional outreach. The bot facilitated follow-ups with customers to address challenges in transitioning to the new application, significantly improving the efficiency of the Sales Department.

- **G2i Inc** — Florida, United States
  Software Engineer for AI Data (Freelancer) — *Oct 2024 - Present*
  - **AI-Generated Code Evaluation**: Evaluated the quality of AI-generated code, providing human-readable summaries and insights to ensure clarity and efficiency.
  - **Solving Coding Challenges**: Solved diverse coding challenges by writing functional and efficient code, ensuring optimal performance and scalability.
  - **Test Case Development**: Developed robust test cases to verify the efficiency and accuracy of code, enhancing reliability across projects.
  - **Instruction Creation and Code Review**: Created detailed instructions to assist others in understanding coding logic and conducted thorough code reviews before integration into AI models.
  - **Variety of AI Projects**: Worked on a wide range of projects, from evaluating Python code quality to developing full mobile applications with chatbots and optimizing their responses for better performance.

- **Aibeecara** — Surabaya, Indonesia
  AI Engineer — *May 2024 - May 2025*
  - **VectorDB**: Created a Vector Database (VectorDB) for storing history and retrieving it to implement Retrieval-Augmented Generation (RAG).
  - **Speech-to-Speech**: Integrated Text-to-Speech (TTS) and Speech-to-Text (STT) systems for seamless speech interactions.
  - **Prompt Engineering**: Performed prompt engineering using Gemini Pro to optimize interactions with large language models (LLMs).

PROJECTS

- **Transformer-based Machine Translation**: Re-implemented the **Transformer architecture** as described in **"Attention is All You Need"** and trained on the **Opus-100** dataset with 1 million sentence pairs using **PyTorch**, setting up **distributed training** across multiple GPUs for efficiency.
- **Image to Text Election Form**: Image-to-text model for **extracting numerical results** from election forms collected from various polling stations (TPS).
- **Cyberbullying Detection**: Developed a machine learning model to detect cyberbullying, employing **end-to-end machine learning practices** including distributed computing, data versioning, model versioning, and distributed dataset on the **Google Cloud Platform**. Deployed as a REST API using **FastAPI**.
- **Fake News Detection**: Employed Convolutional Neural Networks (CNN) and Recurrent Neural Networks (RNN), **incorporating three types of embeddings** (token, character, and feature), for automatic detection of fake news.
- **Weather Forecasting**: Developed a machine learning model to **provide accurate weather predictions** to support planning and scheduling for the relocation project of the capital city of Indonesia from Jakarta to East Kalimantan.

EDUCATION

- **Institute Technology of Sepuluh Nopember** — Surabaya, Indonesia
  Undergraduate of Science in Mathematics; GPA: 3.2

- **Giri High School** — Banyuwangi, Indonesia
  Acceleration Student at Science Specialization; Score: 90

Achievement

- **Global Project Based Learning ITS x SIT Computer Science** — Tokyo, Japan
  Best Group Project — *September 2025*
  - **Chattering Reduction in Steel Cutting**: Developed an early detection model using XGBoost to predict chattering in prehardened steel cutting processes, achieving real-time monitoring capabilities.
  - **Multi-Attention Predictive Model**: Implemented a multi-attention neural network model to predict future sensor readings, enabling proactive machine shutdown when chattering is detected, preventing tool damage and improving manufacturing efficiency.

- **Global Project Based Learning ITS x SIT Mathematics** — Surabaya, Indonesia
  Top Inspiring Student — *August 2025*
  - **Mastermind Optimization Project**: Developed mathematical optimization algorithms to determine the most effective number combinations for the Mastermind game, utilizing advanced mathematical modeling and computational analysis.
  - **Elo Rating System Project**: Designed and implemented an efficient and fair Elo rating system to determine player rankings, including dynamic rating adjustment mechanisms for fair competition evaluation.

- **Data Quest Airnology 2.0** — Airlangga University
  Finalist — *Sep 2023*
  - **Preliminary**: Developed a machine learning model to provide accurate weather predictions
  - **Final**: Live coding session to developed automatic drugs logo labeling based on its package

- **Gammafest Data Science Competition** — Institute Agricultural of Bogor
  Finalist — *Oct 2024*
  - **Preliminary**: Developed a model to extract percentage of polling for every candidates in the form
  - **Final**: Present the strategy to tackle the problem and using explainable ai method to give a view how model generalizes

- **Brawijaya Startup Action** — Brawijaya University
  Finalist — *April 2023*
  - **Preliminary**: Create prototype of business model. The business model is CRM platform that integrates with AI Agent to help and assist every workflow in workplace
  - **Final**: Create pitch desk and present them to investors and judges

Programming Skills

- **Languages and Frameworks**: Python, Java, Kotlin, TensorFlow, PyTorch, Scikit-learn, Transformers

- **Technologies and Tools**: AWS, GCP, Kubernetes, Docker, Flyte, Dask, PostgreSQL, Git, Poetry, DVC, MLflow, BentoML, Django, Fast-API